A REPORT ON

Human Computer Interaction - Study Oriented Project for the Second Semester of 2024

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Problem Statement

It is observed that several translation applications exist in India but are not frequently used by the general public. Some translation applications that deal with Indian languages are often inaccurate and not helpful. The objective of this research is to analyze why current translation application designs are not user-friendly through the Technology Acceptance Model, Self-Determination Theory, and Thematic Analysis to begin with and to improve on current designs after getting insights from user studies including but not limited to interviews and surveys.

Translation Applications

We conducted research by finding HCI studies on translation applications, with a special emphasis on translation apps dealing with Indian languages.

1. Action Translate: Supporting Students in Translation Volunteering

   Many NGOs struggle with resource constraints, hindering their ability to translate documents and communicate effectively with local communities and stakeholders. Translation is essential for inclusivity and reaching diverse audiences.

   Action Translate addresses these challenges by providing an innovative platform for student volunteering in translation. It leverages online collaborative translation, combining machine translation with human verification to ensure the delivery of accurate and high-quality translations.

   This approach streamlines the translation process, offering a comprehensive workflow covering import, post-editing, review, and export. Volunteers are motivated by altruistic and utilitarian reasons, actively contributing to worthy causes while gaining valuable skills. Gamification enhances engagement, fostering a sense of ownership and community. Flexibility in volunteering and the role of a dedicated project manager ensure effective coordination and the delivery of top-notch outcomes.

   Read a more comprehensive analysis here.

2. Toward a Multilingual Conversational Agent: Challenges and Expectations of Code-mixing Multilingual Users

   Multilingual users often code-mix in conversations, but conversational agents primarily remain monolingual, causing difficulties in communication and understanding. There's a lack of understanding of code-mixing experiences and expectations in voice-based conversational agents, leading to biased and limited interactions.

   To address these challenges, researchers have explored the experiences of multilingual users with code-mixing and conversational agents. Workshops and studies were conducted to understand user needs and expectations, leading to the identification of design requirements for code-mixing conversational agents.

   The outcome of this research is a set of design principles for code-mixing conversational agents analyzed using thematic analysis. These principles include user-like code-mixing to establish common ground, adjusting code-mixing level and personality based on user expectations, understanding complex accent combinations, and maintaining a consistent

persona across all language modes. Implementing these principles can lead to conversational agents that better serve the needs of multilingual users and enhance communication experiences.

Read a more comprehensive analysis here.

3. Unmet Needs and Opportunities for Mobile Translation AI

   Perhaps the closest paper to our problem statement being dealt with, translation apps and devices are primarily associated with aiding travelers abroad, yet the need for cross-language communication extends beyond tourism. There's a lack of understanding of translation needs across different communities, including United States-based travelers, migrant workers in India, and immigrant populations in the United States. Existing research fails to detail these needs comprehensively or evaluate the efficacy of translation apps in meeting them.

   To address these issues, researchers conducted surveys and interviews to investigate language barriers and translation needs in diverse communities. They also analyzed the capabilities and limitations of popular translation apps, such as Microsoft's mobile translation app and Google Translate.

   The research identified various challenges faced by different communities, including transactional and survival language barriers among migrant workers in India and social, emotional, and occupational challenges among immigrant populations in the United States. Translation apps were found to be widely used for short transactions but often fell short in longer, nuanced conversations, impacting users' daily lives. The study emphasizes the need for translation technologies to adapt to individual literacy levels, provide visual and audio support, and minimize errors to enhance accessibility and usability for diverse user groups.

   Read a more comprehensive analysis here.

4. [2003.07568] XPersona: Evaluating Multilingual Personalized Chatbot

   The paper "XPersona: A Multi-lingual Multi-turn Persona-based Dialogue Dataset for Evaluating Multilingual Dialogue Systems" introduces the XPersona dataset, an extension of the Persona-Chat dataset to six languages: Chinese, French, Indonesian, Italian, Korean, and Japanese. This dataset aims to evaluate multilingual dialogue systems capable of generating responses in multiple languages. The authors propose two approaches to address the challenges of creating such systems: cross-lingual transfer learning and learning directly from noisy multilingual data. They evaluate these approaches on the XPersona dataset and compare them to strong translation-based models and monolingual models.

The paper details the architecture of the multilingual personalized conversational models used in the experiments, which include encoder-decoder and causal decoder architectures. These models are initialized with pretrained contextualized multilingual language models and trained using cross-entropy loss. The experimental results demonstrate that a multilingual system can outperform strong translation-based models and perform comparably to or even better than monolingual models. However, the cross-lingual performance remains lower than other models, indicating the challenges of cross-lingual conversation modeling.

In conclusion, the paper summarizes its contributions, including the XPersona dataset, cross-lingual and multilingual baselines, and insights into the potential of multilingual systems to understand mixed language dialogue contexts and generate coherent responses. It also discusses the limitations of current approaches and suggests future research directions in this field.

5. Language as Participation: Multilingual User Experience Design | Proceedings of the 38th ACM International Conference on Design of Communication

   The research paper "Language as Participation: Multilingual User Experience Design" advocates for a participatory approach to user experience design that prioritizes the needs and knowledge of multilingual users. It critiques the extraction model of UX, where users are often engaged solely for their information, without receiving reciprocal benefits. Instead, the paper emphasizes the importance of engaging users as active creators in the design process, valuing their racial, linguistic, and cultural diversity.

   The paper highlights the significance of participatory design methods in incorporating the perspectives and expertise of multilingual users to drive design decisions. Examples from design projects in Nepal and the US illustrate how collaborative translation activities and community-driven approaches can lead to more inclusive and culturally sensitive design outcomes. It also acknowledges the potential for participatory design to feel extractive and stresses the need for designers to be aware of power dynamics in any design activity involving marginalized communities.

   Introducing Multilingual User Experience design as a participatory methodology, the paper positions multilingual users as designers who collaborate with UX researchers to guide design decisions. It emphasizes the importance of recognizing linguistic and cultural experiences as valuable expertise that can inform design decisions. The paper advocates for a more inclusive and participatory approach to multilingual communication design, underscoring the value of collaborative and community-driven approaches in creating culturally relevant and user-centered design solutions.

6. Workplace Learning through Human‐Machine Interaction in a Transient Multilingual Blue‐Collar Work Environment - Hovens - 2020 - Journal of Linguistic Anthropology - Wiley Online Library

A transient multilingual blue-collar environment is characterized by temporary contracts, diverse linguistic backgrounds among employees, and engagement in manual labor or industrial work. This setting presents distinct challenges related to communication, workplace dynamics, and learning processes within the organization. The study delves into how workplace learning unfolds in such environments, emphasizing the hurdles posed by transience, language diversity, and limited human interaction. It also sheds light on the importance of jointly negotiated work practices in enhancing productivity and efficiency, drawing insights from a metal foundry near the Dutch-German border where collaborative work practices have emerged.

The research also explores the role of human-machine interaction in facilitating workplace learning, especially in environments with limited human-human interaction opportunities. It highlights how human-machine interaction can help overcome some challenges while noting areas where obstacles persist. Communication barriers, including language diversity and transient work relations, are identified as major obstacles to effective workplace learning. The study emphasizes the influence of texts in institutional settings, emphasizing the need for recontextualization to make them meaningful in workplace interactions.

Methodologically, the study involves extensive ethnographic fieldwork in a metal foundry, providing valuable insights into the challenges faced in transient multilingual blue-collar environments. It focuses on a critical case study to explore how human-machine interaction and collaborative work practices can address communication barriers and enhance learning processes. In conclusion, the research underscores the significance of innovative strategies in overcoming communication challenges and fostering workplace learning in transient multilingual blue-collar environments. It advocates for tailored approaches to optimize learning processes and productivity in such unique work settings.

Conclusion: Very little research has been done in the Indian language context in HCI studies. There were other methods used to analyse Indian language translation but none of those papers were HCI related. There is a clear opportunity to improve existing designs.

Technology Acceptance Model

Technology Acceptance Model (TAM): TAM is a theoretical model that helps explain how users come to accept and use technology. It suggests that perceived usefulness and perceived ease of use are key determinants of an individual's intention to use a technology, which in turn influences actual usage behavior. TAM has been widely used in studies related to the adoption of various technologies, such as information systems, mobile apps, and e-commerce platforms.

1. Acceptance of mobile technology by older adults: a preliminary study

   The study delves into understanding how older adults perceive and accept mobile technologies for self-managing healthcare. It explores the experiences and perspectives of two distinct groups - technology adopters and non-adopters aged 60 and above - shedding light on their attitudes towards these technologies.

   Leveraging established HCI models such as TAM and UTAUT, the study scrutinizes the motivations and behaviors of the interviewees. Recognizing the need for a more comprehensive framework, adaptations are made to accommodate a broader spectrum of criteria, including the introduction of a novel phase termed "intention to learn."

   The analysis yields nuanced insights: a notable apprehension among older adults towards learning new technologies, shaped by factors like self-efficacy, conversion readiness, and peer support. Moreover, the research underscores a perceptible discordance between participants' perceptions and the actual benefits and learning efforts associated with these technologies, highlighting the complexity of technology acceptance in this demographic.

   Read a more comprehensive analysis here.

2. Using technology acceptance models for product development: case study of a smart payment card

   The study addresses the shortcomings of traditional TAM adaptations in guiding product development and branding, particularly in understanding user expectations towards technology.

   TAM is adapted to incorporate New Product Development principles, introducing factors such as Usefulness Impact Factors, Ease of Use Impact Factors, and self-compatibility factors. Trustworthiness factors like Privacy and Security Expectations (PSE) and Quality and Reliability Expectations (QRE) are also included. Moreover, the model introduces self-compatibility factors (Actual Self Compatibility, Wish Self Compatibility,

and Ought Self Compatibility) to understand how the technology aligns with users' self-perceptions and preferences.

Analysis of smart card perception reveals insights into acceptance and usage. While perceived as useful, smart cards do not strongly resonate with users. Self-image significantly influences usage, with users prioritizing alignment with their self-perceptions. Convenience, improved overview, and enjoyment drive perception of usefulness. These findings offer valuable guidance for product development and branding strategies, emphasizing convenience and addressing user preferences.

Read a more comprehensive analysis here.

3. A Theoretical and Empirical Reflection on Technology Acceptance Models for Autonomous Delivery Robots

   The paper addresses a limitation of TAM, which primarily focuses on active usage intention and fails to capture situations where interaction might not be an active decision.

   TAM's original factors, such as prior usage, technology anxiety, subjective norms, and attitude towards technology, are expanded upon to introduce the concept of Existence Acceptance (EA). EA pertains to the general perceived usefulness of technology for society rather than for the individual, capturing motivations to study technology and accept its existence.

   The analysis proposes three hypotheses regarding the relationship between emotions, perceptions of threat, enjoyment, trust, interest, prior experiences with robots, general perceived usefulness, subjective social norms, and EA. The study identifies elements that describe EA, including social-emotional, societal-functional, and expected-interactional elements. Competence and discomfort are found to significantly correlate with EA, while warmth and prior experience show mixed results. These findings contribute to a better understanding of technology acceptance beyond active usage intention, shedding light on societal perceptions and emotional responses towards technology.

   Read a more comprehensive analysis here.

4. Predicting information technology usage in the car: towards a car technology acceptance model

   This paper aims at presenting an acceptance model with regard to the cooperation between humans and robots that is based on prior acceptance models while also taking ethical, legal and social implications (ELSI) into account.

TAM is most often not reworked to aim for context specifics. Characteristics of contextual interfaces should be addressed within technology acceptance models.

For estimating the perceived ease of use a direct behavioral experience through using a system is beneficial, but for predicting the perceived usefulness it is sufficient to provide information about a system's functionality.

Categories of comments regarding technology acceptance of novel input modalities in the car were: distraction, safety, usability, ease of use, learnability, design, familiarity, readability, (un)usefulness, comfort, novelty, robustness and simplicity. Categories of distraction and safety were summarized as perceived safety.

The Unified Theory of Acceptance and Use of Technology included factors such as performance expectancy, effort expectancy, social influence, facilitating conditions, and behavioural intention.

New terms: Performance expectancy: the degree to which a user using the system believes it will help them reach their goals: derives from perceived usefulness. Effort expectancy: the degree of ease associated with the use of a system: derives from perceived ease of use.

Read a more comprehensive report here.

5. TAM Reloaded: A Technology Acceptance Model for Human-Robot Cooperation in Production Systems

In this study, TAM was used to study the acceptance of robots in the workplace by humans using several variables.
Some factors used to study the acceptance and their meaning in the context:

1. Subjective Norm: In general, the organization supports the use of the robot.
2. Image: People in my organization who use the robot have more prestige than those who do not
3. Job Relevance: The use of the robot is pertinent to my various job-related tasks
4. Output Quality: The quality of the output I get from the robot is high
5. Result Demonstrability: I have no difficulty telling others about the results of using the robot
6. Perceived Enjoyment: I find using the robot to be enjoyable.
7. Social Implication: I fear that I will lose contact to my colleagues because of the robot.
8. Legal Implication (Occupational Safety): I do not mind if the robot works with me at a shared workstation.
9. Legal Implication (Data protection): I do not mind if the robot records personal information about me.
10. Ethical Implication: I fear that I will lose my job because of the robot

11. Perceived Safety: I feel safe while using the robot.
12. Self-efficacy: I can use the robot if someone shows me how to do it first.
13. Robot Anxiety: Robots make me feel uncomfortable.
14. Robot-related Experience How many times in the past year have you read or watched robot-related news articles, movies or materials on the internet? How many times in the past ten years have you had physical contact with a robot?
15. Perceived Usefulness: Using the robot improves my performance in my job.
16. Perceived Ease of Use: My interaction with the robot is easy.
17. Behavioral Intention: If I could choose whether the robot supports me at work, I would appreciate working with the robot.
18. Use Behavior: I prefer the robot to other machines in the industrial environment.
19. Technology Affinity: I like to visit shops for electronic devices. Electronic devices lead to intellectual impoverishment. Electronic devices make things cumbersome. I inform myself about electronic devices, even if I do not have the intention to purchase them. Electronic devices make people independent. Trying new electronic devices is fun. I know most of the functions of the devices I own. I am enthusiastic when a new electronic device is launched. Electronic devices cause stress. I know a lot about electronic devices. I find it easy to learn how a new electronic device works.

6. Effects of Delivery Time and Delivery Distance of Indoor Robot Delivery Service on User Satisfaction and Reuse Intention | Extended Abstracts of the 2023 CHI Conference on Human Factors in Computing Systems

The paper investigates the influence of delivery time and distance on user satisfaction and reuse intention in indoor robot delivery services, using the Technology Acceptance Model (TAM) as a theoretical framework. By expanding the traditional TAM, the study incorporates delivery time and distance as independent variables, alongside perceived usefulness (PU) and perceived ease-of-use (PEOU). The findings reveal that perceived delivery time positively affects user satisfaction, while actual delivery distance has a stronger positive impact on the intention to reuse the robot delivery service, particularly as the distance increases. Surprisingly, actual delivery time does not significantly influence user satisfaction or reuse intention. The study also validates the positive effects of PU and PEOU on user satisfaction and reuse intention, consistent with prior technology acceptance research. Overall, this research enhances our understanding of technology acceptance in the context of robot delivery services within large office buildings, offering valuable insights for companies providing such services.

The case study of providing robot delivery services with around 100 robots in a large office building, such as Naver's new company building in South Korea, is noteworthy globally for several reasons. Firstly, it provides a real-world environment for studying the acceptance of robot delivery services by actual users within a sizable office setting. Secondly, the study yields practical implications for companies offering robot services in

similar large buildings, presenting a novel contribution to the field. Lastly, it fills a gap in existing research by focusing on the impact of delivery time and distance on robot acceptance, which diverges from prior studies that often targeted potential users or users with indirect experiences.

In conclusion, the paper's findings offer valuable insights into user acceptance of technology, specifically in the realm of robot delivery services within a large office building. By expanding the TAM to include delivery time and distance, the study provides a nuanced understanding of user satisfaction and reuse intention, contributing to both theoretical advancements and practical applications in the field of technology acceptance.

7. OK Google, Let's Learn: Using Voice User Interfaces for Informal Self-Regulated Learning of Health Topics among Younger and Older Adults | Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems

The study investigates the effectiveness of Voice User Interfaces (VUIs) in supporting informal self-regulated learning of health topics among younger and older adults. Through the implementation of a virtual voice-based learning agent called "Health Buddy," the study demonstrates how different learning strategies, such as scaffolding building, conceptual diagramming, and monologue, can be utilized to enhance learners' understanding of health-related information. Key findings reveal that Health Buddy successfully supports informal self-regulated learning by providing prompts, quizzes, and motivational language to guide users through health topics.

While age-related differences in learning outcomes were found to be insignificant, the study emphasizes the importance of interaction fluency for both younger and older adults using VUIs. Interaction fluency significantly impacts learning outcomes and technology acceptance across different age groups. The study also suggests that designing VUIs with a polite and sociable persona, utilizing gender-inclusive language, and providing better error recovery feedback can enhance user experience and acceptance, particularly among older adults. These findings underscore the significance of user-friendly design features in VUIs to improve the effectiveness and acceptance of VUI-based learning programs for diverse age groups.

In conclusion, the study highlights the potential of VUIs, such as Health Buddy, as informal learning partners for both younger and older adults. By examining factors such as interaction fluency, age-related differences in learning outcomes, and user-friendly design features, the study provides valuable insights into enhancing the effectiveness and acceptance of VUI-based learning programs. Understanding these factors can contribute to the development of more engaging and accessible VUIs for health education and beyond.

8. The TAC Toolkit: Supporting Design for User Acceptance of Health Technologies from a Macro-Temporal Perspective | Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems

The research paper introduces the TAC Toolkit as a novel approach to supporting the design for user acceptance of health technologies. The toolkit comprises a set of cards representing antecedent factors of technology acceptance, categorized into Health, Individuality & Social context, and Technology. Each card includes a title, icon, and sensitizing questions on the back, facilitating understanding and discussion among designers and stakeholders. The interdisciplinary collaboration involved in using the TAC Toolkit exposed designers to new perspectives and broadened their understanding of user acceptance factors, with psychologists' involvement being particularly highlighted for discerning nuances in user behaviors and thought processes.

The TAC Toolkit facilitated communication among participants by providing a common vocabulary for discussing acceptance factors. The cards served as conversation starters and helped bridge knowledge gaps among participants with varied backgrounds. Designers expressed surprise at the number of factors influencing acceptance and the importance of considering positive user stories. The multi-choice scenarios aided designers in visualizing a range of user experiences and considering design actions. Methodologically, the study involved 21 participants in workshops conducted via Zoom sessions, where they engaged in role-play activities using personas to explore technology acceptance issues and discuss design actions.

Thematic analysis of workshop transcripts and interviews provided insights into the value of the TAC Toolkit in bridging theory and design practice, challenging designers' preconceptions, and shaping their actions to account for user acceptance. Overall, the TAC Toolkit emerged as a valuable resource for designers in understanding, discussing, and addressing user acceptance of health technologies through interdisciplinary collaboration, structured conversations, and practical applications in design practice.

Self Determination Theory

Self-Determination Theory (SDT): SDT is a theory of motivation that focuses on the inherent psychological needs that drive human behavior. It proposes that individuals have three basic psychological needs: autonomy (the need to feel in control of one's actions), competence (the need to feel capable and effective), and relatedness (the need to feel connected to others). According to SDT, satisfying these needs leads to more self-determined, motivated behavior.

1. Designing for Gender-Role Differences Through the Lens of Self-Determination Theory

The paper addresses the need for personalized persuasive apps that cater to gender-role differences to enhance behavior change processes among individuals.

Self-Determination Theory (SDT) serves as a theoretical guide in designing personalized persuasive apps that support gender roles. The theory suggests that satisfying the psychological needs for autonomy, competence, and relatedness can enhance motivation and engagement. For instance, autonomy can be promoted through goal-setting features for women, competence through rewards tailored for men, and relatedness through features like leaderboards and performance sharing.

The analysis emphasizes the importance of considering gender inclusiveness in the design and data collection processes. By offering non-binary options during data collection, more representative samples can be obtained, leading to more robust and inclusive app designs. This approach aims to improve the acceptance and effectiveness of personalized persuasive apps for behavior change across diverse gender roles.

Read a more comprehensive analysis here.

2. An Examination of Motivation in Physical Therapy Through the Lens of Self-Determination Theory: Implications for Game Design

The paper addresses the challenge faced by researchers and designers in leveraging games for physical therapy effectively, particularly in understanding and incorporating the motivational factors present in traditional therapeutic practices.

Self-Determination Theory (SDT) serves as a foundational framework for game design and therapeutic practice in physical therapy. Specifically, the theory's mini-theories, Basic Psychological Needs Theory (BPNT) and Organismic Integration Theory (OIT), are utilized to explore the motivational aspects of physical therapy delivery. BPNT focuses on the fulfillment of basic psychological needs such as competence, autonomy, and relatedness, while OIT examines how external factors influence patient motivation.

Through reflexive thematic analysis, the study identifies key themes related to competence, autonomy, and relatedness within the context of physical therapy. Therapists' strategies include carefully adapting exercise difficulty to match patients' skill levels, providing feedback to reinforce competence, and fostering trust and a sense of safety to enhance relatedness. The findings highlight the importance of considering a holistic approach to patient motivation in physical therapy, which differs from the predominant focus on skill-game difficulty matching in game-based therapy.

Read a more comprehensive analysis here.

3. Older Adults Using Technology for Meaningful Activities During COVID-19: An Analysis Through the Lens of Self-Determination Theory

The study investigates how older adults utilize technology to engage in meaningful activities during COVID-19 lockdown restrictions, focusing on potential challenges and opportunities in fulfilling their basic psychological needs.

SDT serves as a framework to analyze how participating in meaningful activities supports or undermines older adults' basic psychological needs for autonomy, competence, and relatedness. The study interprets data through the lens of SDT to understand the impact of technology usage on older adults' motivation and well-being.

The thematic analysis reveals that while technology can support older adults' engagement in meaningful activities, it can also pose challenges to their autonomy and competence, particularly in virtual-only settings. Older adults express a preference for personalized and focused interactions, termed as "heavyweight" communications, which contribute to their sense of relatedness. Design recommendations include empowering older adults in technology usage, supporting their engagement in personal interests, providing positive feedback for exploration, facilitating meaningful communication, and promoting participation in beneficent activities.

Read a more comprehensive analysis here.

4. Self-Determination Theory in HCI Games Research: Current Uses and Open Questions

The primary findings from this study were as follows:
In video game play, need satisfaction predicts game enjoyment and lesser need frustration. Students whose basic needs are poorly satisfied are more likely to develop an unhealthy preference for the comparatively dense,consistent, and immediate experiences of need satisfaction in video gameplay.

Video games can be a means of satisfaction because they allow players to experience competence, autonomy, and relatedness. Positive reinforcement has been shown to significantly increase the person’s perception of their own performance, which leads to increased intrinsic motivation to do a task.

Multiple in-game options give players cause to experience autonomy through willing decision-making. Extrinsic motivation was frequently conflated with external regulation.

Player experience was also strongly affected by latency, with substantial changes to enjoyment, frustration, perceived competence, and attribution as latency increased. Players developed negative emotions from the sense of loss of control in interactions with the complex game systems.

Autonomy is thwarted when playing for money and unimpeded when internalised by a sense of value from the task. Competence satisfaction explains the motivational benefits of exaggerated avatar movement in virtual reality.

SDT was used to gamify the co-design process for school children: progression maps can be used to connect with others and satisfy relatedness needs. SDT concepts are frequently used to gamify wellbeing interventions.

4. Designing Conversational Agents: A Self-Determination Theory Approach | Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems

The paper highlights a gap in academic guidelines for designing conversational agents (CAs), despite the existence of usability heuristics and AI design guidelines for interactive and AI-infused products. To address this, the study proposes design principles related to the discoverability of CA capabilities, the design of CA responses, and setting accurate user expectations when introducing new capabilities. These principles aim to enhance users' sense of competence, autonomy, and relatedness when interacting with CAs.

Effective communication is identified as a crucial aspect of CA design, as users may feel less competent when hindered by issues such as voice recognition robustness, interpretation of complex sentences, and robotic responses. To address these challenges, the study suggests improving voice recognition robustness, automatically retrieving contextual information, providing more human-like responses, and considering the impact of CAs on users of all age groups.

Furthermore, the research emphasizes the role of CAs as facilitators of social activities, enriching interactions between individuals and potentially influencing how people communicate with each other. The study translates its implications into actionable design guidelines, focusing on user interactions at different phases of interaction. These guidelines are aimed at creating positive user experiences by considering users' psychological needs and social interactions when designing conversational agents.

5. Designing for Gender-Role Differences Through the Lens of Self-Determination Theory | Adjunct Proceedings of the 29th ACM Conference on User Modeling, Adaptation and Personalization

The paper underscores the importance of designing personalized persuasive apps that consider gender-role differences, particularly through the lens of Self-Determination Theory (SDT). Persuasive apps are designed to encourage positive behavior change and often customize features based on user characteristics such as personality, culture, and social factors. However, gender biases in software design exist, and addressing these biases can lead to more inclusive and effective persuasive technologies.

SDT, which emphasizes intrinsic motivation and self-determination in human behavior, highlights the importance of autonomy, competence, and relatedness in motivation. The document suggests design strategies for persuasive apps that cater to both genders, including goal-setting features with options for exercise selection and self-monitoring. By considering gender differences and leveraging SDT principles, designers can create more inclusive designs that eliminate barriers and enhance features for all genders, avoiding segmentation by gender and supporting basic psychological needs.

The research contributions of the paper emphasize the need to study and understand gender-role differences to create inclusive and effective persuasive technology. By incorporating SDT principles and personalizing persuasive apps to cater to diverse user needs, designers can enhance behavior change outcomes and create more engaging and impactful apps for all users.

Thematic Analysis

Thematic analysis is a method used to identify, analyze, and report patterns (themes) within qualitative data. It is often used in qualitative research to explore the meanings and experiences of participants. Thematic analysis involves systematically coding and categorizing data to identify common themes, which can then be used to generate insights or hypotheses.

"It's not like Jarvis, but it's pretty close!" - Examining ChatGPT's Usage among Undergraduate Students in Computer Science

The study on undergraduate students' perspectives on using ChatGPT in academic settings highlighted several key findings. Firstly, participants provided consent for interview recordings, and the study faced limitations in terms of university-specific components and participant recruitment due to resource constraints. Secondly, a significant sample size of 480 responses was collected from undergraduate Computer Science students across three universities, enabling a robust quantitative analysis. Thirdly, students reported usability challenges with ChatGPT, such as repetitive account authentication and difficulty in setting context for prompts, which impacted their overall experience and perception of the tool.

Students' usage patterns and benefits with ChatGPT were also elucidated in the study. Initially, students explored ChatGPT for general and CS-specific capabilities, later relying on it for academic assignments, test preparation, and concept reinforcement. Despite reporting benefits such as immediate feedback, access to information, personalized learning, and tutoring, students also faced issues like incorrect and unreliable responses, which affected their overall experience.

The study adhered to ethical guidelines by obtaining consent from participants and ensuring transparency, privacy, and diversity in participant selection. Recommendations for improvement include enhancing ChatGPT's usability, reliability, and response accuracy to better cater to students' academic needs. Overall, the study provides valuable insights into how undergraduate students in Computer Science utilize ChatGPT, the challenges they face, and the potential areas for improvement in leveraging this AI tool for educational purposes.

Road Ahead

In the next semester, we are looking to solidify the problem statement of the project, decide upon a mode of information collection, and finalize the models on the basis of which the information collected shall be analysed. We would include Thematic Analysis as a qualitative technique for analyzing data and shall finalize upon quantitative or qualitative methods of data collection, or both.